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EXAMINER	
MERED, HABTE	

ART UNIT	PAPER NUMBER
2474	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,671	LOHR ET AL.	
	Examiner	Art Unit	
	HABTE MERED	2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/1/09*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *79,81-93,95-100,102-105 and 107-129* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *79,81-93,95-100,102-105 and 107-129* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 April 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 12/1/2009 has been entered and fully considered.

2. Claims 79, 81-93, 95-100, and 102-105, 107-129 are currently pending. Claims 80, 94, 101, and 106 are cancelled. Claims 79, 100, 114, 116, 118, and 119 are the base independent claims. All of the base independent claims are amended. Dependent claims 81-84, 87-88, 90, 92, 93, 95, 97, 98, 102, 103, 105, 109, 112, 115, 117, 119, and 120-129 are currently amended.

3. The IDS submitted on 2/12/2010 has been fully considered and the corresponding 1449 form is an attachment of the instant office Action.

Response to Arguments

4. Applicant's arguments with respect to all pending amended claims filed on 12/1/2009 have been fully considered but they are not persuasive.

5. Applicant in the Remarks, on page 18, argues with respect to independent amended claim 79 that Terry'133 fails to disclose three specific items and further states that Terry'133 does not teach the subject matter of claim 79. The three specific items are a) not including the identification of the flow in the schedule request sent to the base station by the mobile b) the base station sending the schedule assignment corresponding to the requested id c) the RNC not sending QoS parameters of the flows to the base station/Node B.

Examiner's Response: Examiner respectfully disagrees. The subject matter of claim 79 is more than the above stated missing items. Terry'133 readily teaches a mobile requesting a rate schedule from Node B and the Node B scheduler assigns/schedules rate resources for the use of the mobile. The mobile multiplexes the Mac-d flows and transmits based on the scheduled rate on a dedicated uplink channel as shown in Figs. 4 and 5 and in paragraphs 28 and 33. It is clear from this discussion that Applicant's position is incorrect in that Terry'133 is a strong primary reference as it lays the frame work of each independent claim including claim 79's subject matter. Further more in the last Office Action Examiner has pointed out that Terry'133 is deficient with the three items and has furnished two secondary references to teach the missing items. It appears Applicant is requiring a 102 rejection/anticipation from Terry'133 and Applicant's position is incorrect. Finally as Applicant readily admits on page 18 that Terry'133 teaches in paragraph 15 that the RNC sends QoS parameters at least related to the mobile to the base station/Node B making Terry'133 a relevant primary reference.

6. Applicant in the Remarks, on page 19, argues with respect to claim 79, that Jorgensen'805 fails to teach a scheduling request that comprises an identifier identifying one flow of the plurality of flows or scheduling by the Node B based on the identifier. Applicant admits Jorgensen'805 indeed teaches scheduling each IP-flow individually in the Remarks on page 20 in lines 10-13 and the flow id is placed in the schedule/reservation request in the Remarks on page 19 in lines 10-12. However,

Applicant in the Remarks on page 20, lines 11-15 tries, to differentiate claim 79 and all other independent claims from Jorgensen'805 disclosure by saying the amended claim 79 now claims “scheduling the transmission of data flows is based on a single flow identifier of one flow of these plurality of flows". Finally Applicant argues in the Remarks on page 21 that Jorgensen'805 teaches in paragraph 471 that for scheduling decision in addition to the IP-flow id Jorgensen'805 takes the QoS Data class into consideration.

Examiner’s Response: Examiner respectfully disagrees. First and foremost it is clear that Applicant readily admits that Jorgensen'805 indeed teaches scheduling each IP-flow individually as stated in the Remarks on page 20 in lines 10-13 and the flow id is placed in the schedule/reservation uplink requests as stated in the Remarks on page 19 in lines 10-12. Jorgensen'805 in paragraph 482 shows that the CPEs send upstream scheduling request based on the IP-flow identifier. Jorgensen'805’s paragraph 482 shows that the uplink scheduling of the uplink resources is based on the IP-flow id. The teaching of Jorgensen'805 when applied to modify Terry'133’s disclosure indeed gives the missing portions, shown above as items a and b, of the claimed invention in amended claim 79.

Second, Applicant seems to argue that in addition to the flow identifier Jorgensen'805 takes into consideration QoS data class. Examiner believes taking additional factors into consideration is not excluded by the claim and is irrelevant to the issue at hand.

Third, amended claim 79 literally claims scheduling by the base station the uplink resource, for transmission of data of said plurality of flows to be multiplexed onto the

dedicated uplink channel by said mobile terminal, based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes. It is clear that in no uncertain terms Terry'133 teaches "scheduling by the base station (i.e. Node B) the uplink resource (rate on the enhanced uplink dedicated channel E-DCH), for transmission of data of said plurality of flows (mac-d flows) to be multiplexed onto the dedicated uplink channel (E-DCH) by said mobile terminal (WTRU) - see Figs. 4 and 5 and paragraphs 28 and 33. Any scheduling of resources of uplink dedicated uplink channel equally affects all mac-d flows multiplexed and transmitted on the uplink channel. Scheduling uplink resources based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes is taught by Jorgensen'805 in paragraph 482 as it shows that the uplink scheduling of the uplink resources is based on the IP-flow id.

However, Applicant needs to realize that Terry'133 teaches scheduling uplink resources on a dedicated uplink channel shared by many mac-d flows. For instance if a rate is assigned for the link after a rate request is sent by the mobile to Node B then it will impact the rate of all of the flows to be multiplexed on the dedicated uplink channel. Adding a flow id in the schedule request for the simple purpose of associating it with a set of QoS attributes to be assigned/scheduled to the uplink channel as taught by Jorgensen'805 is independent of the fact that flows are multiplexed on the shared uplink channel. Sending a schedule request for uplink channel resources including the flow id cannot at all be novel based on the disclosure of Terry'133 as modified by Jorgensen'805 teaching. Hence all previously cited arts such as Terry'133, Schultz'855,

and Jorgensen'805 still adequately teach all of the pending amended claims and hence the 103(a) rejections of all the pending claims is maintained and the instant Office Action is made final.

7. In the Remarks on page 22 Applicant argues with the general use of the Schultz'855 reference in the rejection of the independent claims by stating that Schultz'855 does not teach MAC layer implemented at Node B.

Examiner's Response: Examiner respectfully disagrees. First none of the independent claims explicitly claim a MAC layer and hence Applicant's observation is irrelevant. However, all Node Bs have a MAC layer and Schultz'855 discloses this very fact on page 28 lines 15-18. Further as stated on page 28, Lines 15-18 the MAC layer and its scheduler can be located any where in the UMTS including Node B and in Fig. 8 step 805 the MAC scheduler retrieves the QoS parameters from the RRC 705 as shown in Fig. 7. It should be emphasized here that Terry'133 already disclosed in paragraphs 15 and 29 that the RNC controls the QoS and resource parameters for the Node B.

8. Finally Applicant questions the combination of Terry'133 with Jorgensen'805 on page 23 of the Remarks by pointing out Terry'133 is teaching MAC-E multiplexing and Jorgensen'805 teaches per flow differentiation.

Examiner's Response: Examiner respectfully disagrees. Examiner sees no contradiction at all in the teachings of Terry'133 and Jorgensen'805. It appears that Applicant has failed to realize that multiplexing flows on a common dedicated channel is a totally different operation from including an id of a flow/service/queue in a schedule

request for uplink resources. The former is taught by Terry'133 and the latter by Jorgensen'805.

9. Examiner has introduced a new prior art to further make a strong point to Applicant that merely including an id of a flow/service/queue in a schedule request for uplink resources cannot at all be novel. Claims 114-115 are also rejected under U.S.C. 103(a) based on the combinations of Cheng'313 and Cheng'632.

Claim Objections

10. Claims 118-119 and 128-129 objected to because of the following informalities: The claims recite "a computer readable storage medium". Given the specification does not give an exhaustive list of storage medium and does not exclude transitory media like propagation medium and signals. In order to make these claims fully statutory under U.S.C 101(a), Examiner recommends replacing "storage medium" with - - non-transitory medium - - Appropriate correction is required.

11. Claim 125 is objected to because of the following informalities: Claim 125 is a duplicate claim of 121. Claim 125 dependency has to be changed to claim 124 to prevent making it a duplicate claim with claim 121. Appropriate correction is required.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. **Claims 79, 81, 82, 86, 88-93, 95-97, 100, 102, 103, 107-111, 118, 120-123 and 128-129** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry et al (US Pub. No. 20050249133) in view of Jorgensen (US Pub. No. 2007/0073805) and Schultz (WIPO WO 01/63855 A1).

Regarding **claim 79**, Terry'133 discloses a method for scheduling transmissions of terminal **(i.e. Fig. 1 WTRU 100)** in a mobile communication system **(i.e. Fig. 1),** method comprising:

receiving a scheduling request (**i.e. EU rate request/assignment paragraphs 16 and 19)** from the mobile terminal **(i.e. Fig. 1 WTRU 100)** at the base station **(Fig. 1 Node B 200)**, wherein the scheduling (ii) requests allocation of an uplink resource **(i.e. E-DCH transport format combination set (TFCS) subset – see paragraph 20)** to the mobile terminal for transmitting data of said plurality of flows to be multiplexed **(See paragraph 23 lines 1-4 where multiple mac-d flows multiplexed in to MAC-E PDU)** onto the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102) (see paragraphs 19-21 where Terry'133 discloses EU rate request from mobile to base station for resources on uplink E-DCH channel)**, and

scheduling by the base station **(i.e. Node B)** the uplink resource **(i.e. TFCS, data rate, allowed traffic volume - see paragraphs 19 and 28)** for transmission of data of said plurality of flows to be multiplexed onto the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** by said mobile terminal **(i.e. Fig. 1 WTRU 100) (Terry'133 discloses in**

paragraphs 22 and 30 that Node B schedules uplink resources TFCS, rate, traffic volume (paragraphs 19-20) for use by mobiles for uplink transmissions).

Terry'133 fails to disclose that the scheduling request (i) comprises an identifier identifying one flow of the pluralities of flows and scheduling by the base station the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses that the scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the pluralities of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** and scheduling by the base station **(Fig. 3B – base station 302 - see paragraphs 336, 401, and 443)** the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes **(see uplink and downlink frames transmitted using flow id in Fig. 13 as detailed in paragraph 482. Paragraph 482 and the abstract clearly shows the scheduler in the base station as well as in the mobile is able to impact the shared air interface channel and all flows using the shared air interface based on the scheduling request containing an IP-flow id)**.

In view of the above, having the method of Terry'133 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Terry'133 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph

40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Terry'133, however, also fails to expressively disclose receiving at the base station from a radio network (RNC) controller Quality of Service (QoS) attributes of a plurality of flows to be multiplexed onto a single dedicated uplink channel by a mobile terminal. Terry'133 discloses in paragraph 29 that the combination of MAC-d flows multiplexed in one MAC-e PDU in the mobile is determined by the RNC 300.

However, the above mentioned claimed limitations are well known in the art as evidenced by Schultz'855. In particular, Schultz'855 discloses receiving at the base station **(See Figure 2, Node B)** from a radio network (RNC) controller **(See on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** QoS attributes of a plurality of flows **(i.e. each RAB in Figure 7 has a unique QoS known at setup by Node-B as illustrated on page 28, Lines 19-22)** to be multiplexed **(i.e. the flows on the transport channels are muxed at the UE)** onto a single dedicated uplink channel **(i.e. physical channel DCH of Figure 7)** by a mobile terminal **(UE) (See also pages 6 and 7 discussion with regards to Figure 2 and pages 27-29 for discussion with regards to Figure 7)**.

In view of the above, having the method of Terry'133 and then given the well established teaching of Schultz'855, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Terry'133 as taught by Schultz'855, since Schultz'855 clearly states on page 3, Lines 19-22 that the modification results in ability to handle specified guaranteed bandwidth and QoS

requirements when multiplexing more than one incoming data flow onto a single output channel.

Regarding **claim 81**, Terry'133 discloses a method, wherein each flow (i.e. each mac-d flow) of said plurality of flows has a priority. **(See Paragraphs 6 and 25 each mac-d flow has a priority derived from its corresponding logical channel priorities and priority handling entity)**.

Regarding **claim 82** Terry'133 discloses a method wherein the plurality of flows are multiplexed on a MAC-d flow. **(See Terry'133 paragraph 30 and Fig. 3 and Schultz'855 Fig. 5)**

Regarding **claim 86**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the scheduling request received by the base station is transmitted via Medium Access Control (MAC) control signaling **(See Schultz'855 Figure 2 where the Mac-d has a dedicated control channel and the schedule request is transmitted from the UE to Node B using similar mechanism shown in Figure 3)**.

Regarding **claim 88**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes is received from a network element **(See Schultz'855 on page 7, Lines 19-27 and Page 14, Lines 10-15 how**

Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805) terminating the radio resource control signaling of the mobile terminal **(Schultz'855 shows in Figures 2 shows the RNC terminating the UE control message and Schultz'855 in Figure 3 shows the control message is an RRC signaling)**.

Regarding **claim 89**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes are included in a configuration message **(Schultz'855 on page 7, Lines 15-22 shows that the QoS is assigned when the RABs are configured by the RNC and necessitate use of configuration message)**.

Regarding **claim 90**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method wherein the QoS attributes are received by the base station from the radio network controller **(See Schultz'855 on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** in a radio link setup message or a radio link reconfiguration message **(Schultz'855 on page 7, Lines 15-22 and last paragraph of page 27 shows that the QoS is assigned when the RABs are configured and reconfigured by the RNC and necessitate use of configuration and reconfiguration message)**.

Regarding **claim 91**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes is received from a serving

radio network controller **(See Schultz'855 on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 serving RNC 140 passes QoS parameters. See also Fig. 8 block 805).**

Regarding **claim 92,** the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the plurality of flows are associated to a respective one radio bearers between the mobile terminal and the radio network controller and the method further comprises mapping QoS attributes of the radio bearers to the QoS attributes of the respective associated flow**. (Schultz'855 on page 28 in the last paragraph teaches mapping of radio bearer's QoS to the QoS flows as further shown in Figure 7).**

Regarding **claim 93**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the mapping of the QoS attributes comprises taking into account uplink delays on the interface between the base station and the radio network controller **(Schultz'855 on page 14, lines 10-15 teaches taking into consideration such delays as a QoS parameter).**

Regarding **claim 95**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the identifier comprised in the scheduling request identifies the highest priority flow **(Jorgensen'805 shows the scheduling request highest priority flow in Fig 12 K element 1244b).**

Regarding **claim 96**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the highest priority flow has the highest QoS demands (**Jorgensen'805 shows the scheduling request highest priority flow in Fig 12 K element 1244b).**

Regarding **claim 97**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes comprise at least one of a transfer delay, a guaranteed bit rate, a traffic handling priority, a service type identification, a traffic class and a reordering release timer of the reordering buffer in the Medium Access Control (MAC) entity **(Terry'133 in paragraph 19 shows data rate which is a guaranteed bit rate is a QoS attribute)**.

Regarding **claim 100**, Terry'133 discloses

A base station **(Fig. 1 Node B 200)** for scheduling a plurality of transmissions of a mobile terminal **(i.e. Fig. 1 WTRU 100)** in a mobile communication system **(i.e. Fig. 1)**, said base station comprising:

a communication section **(i.e. Fig. 1 Uplink EU signaling Channel receiver 104)** further adapted to receiving a scheduling request (**i.e. EU rate request/assignment paragraph 19)** from the mobile terminal **(i.e. Fig. 1 WTRU 100)**, wherein the scheduling request (ii) requests allocation of an uplink resource **(i.e. E-DCH transport format combination set (TFCS) subset – see paragraph 20)** to the mobile terminal for transmitting data of said plurality of flows **(mac-d flows – see paragraph**

23) to be multiplexed **(See paragraph 23 lines 1-4 where multiple mac-d flows multiplexed in to MAC-E PDU)** on to the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102) (see paragraphs 19-21 where Terry'133 discloses EU rate request from mobile to base station for resources on uplink E-DCH channel)**, and

a scheduling section **(Fig. 4 scheduler 222)** adapted to schedule uplink resource **(i.e. TFCS)** for transmission of data of said plurality of flows to be multiplexed onto on **(See paragraph 23 lines 1-4 where multiple mac-d flows multiplexed in to MAC-E PDU)** the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** by said mobile terminal **(i.e. Fig. 1 WTRU 100)** based on the QoS attributes **(i.e. QoS as priority classes see paragraphs 22 and 30) (Terry'133 discloses in paragraphs 22 and 30 that Node B schedules uplink resources TFCS (paragraphs 19-20) for use by mobiles for uplink transmissions)**.

Terry'133 fails to disclose that the scheduling request (i) comprises an identifier identifying one flow of the pluralities of flows and scheduling section adopted to schedule the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses that the scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the pluralities of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** and scheduling section adopted to schedule **(Flow scheduler 604 in Fig. 6 and Fig. 3 base**

station 302 - see paragraphs 336, 401, and 443) the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes **(see uplink and downlink frames transmitted using flow id in Fig. 13 as detailed in paragraph 482. Paragraph 482 and the abstract clearly shows the scheduler in the base station as well as in the mobile is able to impact the shared air interface channel and all flows using the shared air interface based on the scheduling request containing an IP-flow id)**.

In view of the above, having the base station of Terry'133 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the base station of Terry'133 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator of the base station optimizing end-user quality of service while being aware of each flow/application.

Terry'133, however, also fails to expressively disclose a base station with a communication section adopted to receive from a radio network (RNC) controller Quality of Service (QoS) attributes of a plurality of flows to be multiplexed onto a single dedicated uplink channel by a mobile terminal. Terry'133 discloses in paragraph 29 that the combination of MAC-d flows multiplexed in one MAC-e PDU in the mobile is determined by the RNC 300

However, the above mentioned claimed limitations are well known in the art as evidenced by Schultz'855. In particular, Schultz'855 discloses a base station with a **(See Figure 2, Node B)** a communication section adopted to receive from a radio

network (RNC) controller **(See on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** QoS attributes of a plurality of flows **(i.e. each RAB in Figure 7 has a unique QoS known at setup by Node-B as illustrated on page 28, Lines 19-22)** to be multiplexed **(i.e. the flows on the transport channels are muxed at the UE)** onto a single dedicated uplink channel **(i.e. physical channel DCH of Figure 7)** by a mobile terminal **(UE) (See also pages 6 and 7 discussion with regards to Figure 2 and pages 27-29 for discussion with regards to Figure 7)**.

In view of the above, having the base station of Terry'133 and then given the well established teaching of Schultz'855, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the base station of Terry'133 as taught by Schultz'855, since Schultz'855 clearly states on page 3, Lines 19-22 that the modification results in ability to handle specified guaranteed bandwidth and QoS requirements when multiplexing more than one incoming data flow onto a single output channel.

Regarding **claim 102**, it is noted that the limitations of claim 102 corresponds to that of claim 81 as discussed above, please see the Examiner's comments with respect to claim 81 as set forth in the rejection above.

Regarding **claim 103**, it is noted that the limitations of claim 103 corresponds to that of claim 82 as discussed above, please see the Examiner's comments with respect to claim 82 as set forth in the rejection above.

Regarding **claim 107**, it is noted that the limitations of claim107 corresponds to that of claim 89 as discussed above, please see the Examiner's comments with respect to claim 89 as set forth in the rejection above.

Regarding **claim 108**, it is noted that the limitations of claim108 corresponds to that of claim 91 as discussed above, please see the Examiner's comments with respect to claim 91 as set forth in the rejection above.

Regarding **claim 109**, it is noted that the limitations of claim109 corresponds to that of claim 95 as discussed above, please see the Examiner's comments with respect to claim 95 as set forth in the rejection above.

Regarding **claim 110**, it is noted that the limitations of claim110 corresponds to that of claim 96 as discussed above, please see the Examiner's comments with respect to claim 96 as set forth in the rejection above.

Regarding **claim 111**, it is noted that the limitations of claim111 corresponds to that of claim 97 as discussed above, please see the Examiner's comments with respect to claim 97 as set forth in the rejection above.

Regarding **Claim 118**, Terry'133 discloses a computer readable storage medium for storing instructions that when executed by a processor of a base station **(Fig. 1 Node B 200)** in a mobile communication system cause the base station to schedule transmissions by a plurality of mobile terminals **(i.e. Fig. 1 WTRU 100)**, by:

receiving a scheduling request (**i.e. EU rate request/assignment paragraph 19)** the mobile terminal **(i.e. Fig. 1 WTRU 100)** at the base station **(Fig. 1 Node B 200)**, wherein the scheduling request (ii) requests allocation of an uplink resource **(i.e. E-DCH transport format combination set (TFCS) subset – see paragraph 20)** to the mobile terminal for transmitting data of the plurality of flows to be multiplexed **(See paragraph 23 lines 1-4 where multiple mac-d flows multiplexed in to MAC-E PDU)** onto the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102) (see paragraphs 19-21 where Terry'133 discloses EU rate request from mobile to base station for resources on uplink E-DCH channel)**, and

scheduling by the base station **(i.e. Node B)** the uplink resource **(i.e. TFCS, data rate, allowed traffic volume - see paragraphs 19 and 28)** for transmission of data of said plurality of flows to be multiplexed onto the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** by said mobile terminal **(i.e. Fig. 1 WTRU 100) (Terry'133 discloses in**

paragraphs 22 and 30 that Node B schedules uplink resources TFCS, rate, traffic volume (paragraphs 19-20) for use by mobiles for uplink transmissions).

Terry'133 fails to disclose that the scheduling request (i) comprises an identifier identifying one flow of the pluralities of flows and scheduling by the base station the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses that the scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the pluralities of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** and scheduling by the base station **(Fig. 3B – base station 302 - see paragraphs 336, 401, and 443)** the uplink resource based on the identifier identifying said one flow of said plurality of flows and its related QoS attributes **(see uplink and downlink frames transmitted using flow id in Fig. 13 as detailed in paragraph 482. Paragraph 482 and the abstract clearly shows the scheduler in the base station as well as in the mobile is able to impact the shared air interface channel and all flows using the shared air interface based on the scheduling request containing an IP-flow id)**.

In view of the above, having the medium of Terry'133 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the medium of Terry'133 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph

40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Terry'133, however, also fails to expressively disclose receiving at the base station from a radio network (RNC) controller Quality of Service (QoS) attributes of a plurality of flows to be multiplexed onto a single dedicated uplink channel by a mobile terminal. Terry'133 discloses in paragraph 29 that the combination of MAC-d flows multiplexed in one MAC-e PDU in the mobile is determined by the RNC 300

However, the above mentioned claimed limitations are well known in the art as evidenced by Schultz'855. In particular, Schultz'855 discloses receiving at the base station **(See Figure 2, Node B)** from a radio network (RNC) controller **(See on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** QoS attributes of a plurality of flows **(i.e. each RAB in Figure 7 has a unique QoS known at setup by Node-B as illustrated on page 28, Lines 19-22)** to be multiplexed **(i.e. the flows on the transport channels are muxed at the UE)** onto a single dedicated uplink channel **(i.e. physical channel DCH of Figure 7)** by a mobile terminal **(UE) (See also pages 6 and 7 discussion with regards to Figure 2 and pages 27-29 for discussion with regards to Figure 7)**.

In view of the above, having the medium of Terry'133 and then given the well established teaching of Schultz'855, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the medium of Terry'133 as taught by Schultz'855, since Schultz'855 clearly states on page 3, Lines 19-22 that the modification results in ability to handle specified guaranteed bandwidth and QoS

requirements when multiplexing more than one incoming data flow onto a single output channel.

Regarding **claim 120**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose the method according to claim 79, wherein the scheduling request requests allocation of an uplink resource to the mobile terminal for transmitting data of said plurality of flows multiplexed to a Protocol Data Unit (PDU) on the dedicated uplink channel **(See Terry'133 paragraph 22 discussing multiplexed MAC PDU and in paragraph 23 it is identified as MAC-e PDU – see further paragraphs 29-30 and claim 45 to understand mac d s are muxed into a MAC-E PDU)**.

Regarding **claim 121**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose the method according to claim 120, wherein the PDU is MAC-e PDU **(see Terry'133 Paragraph 23 it is identified as MAC-e PDU)**

Regarding **claim 122**, it is noted that the limitations of claim122 corresponds to that of claim 120 as discussed above, please see the Examiner's comments with respect to claim 120 as set forth in the rejection above.

Regarding **claim 123**, it is noted that the limitations of claim123 corresponds to that of claim 121 as discussed above, please see the Examiner's comments with respect to claim 121 as set forth in the rejection above.

Regarding **claim 128**, it is noted that the limitations of claim128 corresponds to that of claim 120 as discussed above, please see the Examiner's comments with respect to claim 120 as set forth in the rejection above.

Regarding **claim 129**, it is noted that the limitations of claim129 corresponds to that of claim 121 as discussed above, please see the Examiner's comments with respect to claim 121 as set forth in the rejection above.

14. **Claims 83-84, 99, 113 and 124-125** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry'133 in view of Jorgensen'805, and Schultz'855 as applied to claims 79 and 100 above, and further in view of Lucent-3GPP ("Scheduled and Autonomous Mode Operation for the Enhanced Uplink", 2003, 3GPP TSG RAN WG1#31 R1-03-0284).

Regarding **claim 83**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method wherein the QoS attributes comprises a transmission mode associated with the data of the flow.

Lucent-3GPP discloses a method wherein the QoS information comprises a transmission mode associated with the data flow. **(In section 2 and 4 it is shown transmission mode has to do with a choice of scheduling and if Node B controlled scheduling then the QoS info is buffer status, power margin and channel quality)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Lucent-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of

Terry'133, Jorgensen'805, and Schultz'855 as taught by Lucent-3GPP, since Lucent-3GPP clearly states in Section 3 that the modification results in ability to have co-existence of scheduled and autonomous transmission by a user equipment.

Regarding **claim 84**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method, wherein the transmission mode indicates whether data of the flow is transmitted applying an additional gain factor.

Lucent-3GPP discloses a method, wherein the transmission mode indicates whether data of the flow is transmitted applying an additional gain factor. **(Lucent-3GPP teaches a transmission mode where the flow is transmitted applying an additional gain factor in bullet item 4 of page 5)**

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Lucent-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Lucent-3GPP, since Lucent-3GPP clearly states in Section 3 that the modification results in ability to have co-existence of scheduled and autonomous transmission by a user equipment and ability to do H-ARQ with greater flexibility as stated in bullet item 3 of page 5 in Lucent-3GPP's disclosure.

Regarding **claim 99**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fails to disclose a method wherein further comprising considering a predetermined gain factor to be additionally applied to the transmission when scheduling the mobile terminal from which the scheduling request has been received at the base station.

Lucent-3GPP discloses a method, wherein further comprising considering a predetermined gain factor to be additionally applied to the transmission when scheduling the mobile terminal from which the scheduling request has been received at the base station **(Lucent-3GPP teaches a transmission mode where the flow is transmitted applying an additional gain factor in bullet item 4 of page 5 and it is predetermined to meet the need of already known uplink transport channel power requirement).**

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Lucent-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Lucent-3GPP, since Lucent-3GPP clearly states in Section 3 that the modification results in ability to have co-existence of scheduled and autonomous transmission by a user equipment and ability to do H-ARQ with greater flexibility as stated in bullet item 3 of page 5 in Lucent-3GPP's disclosure.

Regarding **claim 113**, it is noted that the limitations of claim113 corresponds to that of claim 99 as discussed above, please see the Examiner's comments with respect to claim 99 as set forth in the rejection above.

Regarding **claim 124**, the combination of Terry'133, Jorgensen'805, Lucent-3GPP and Schultz'855 disclose the method according to claim 113, wherein the scheduling request requests allocation of an uplink resource to the mobile terminal for transmitting data of said plurality of flows multiplexed to a Protocol Data Unit (PDU) on the dedicated uplink channel **(See Terry'133 paragraph 22 discussing multiplexed MAC PDU and in paragraph 23 it is identified as MAC-e PDU – see further paragraphs 29-30 and claim 45 to understand mac d s are muxed into a MAC-E PDU)**.

Regarding **claim 125**, the combination of Terry'133, Jorgensen'805, Lucent-3GPP and Schultz'855 disclose the method according to claim 120/124, wherein the PDU is MAC-e PDU **(see Terry'133 Paragraph 23 it is identified as MAC-e PDU)**

15. **Claims 85, 87, 104 and 105** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry'133 in view of Jorgensen'805 and Schultz'855 as applied to claim 79 above, and further in view of Fujitsu-3GPP ("Signaling framework for enhanced uplink scheduling", August 2004, 3GPP TSG RAN1 and RAN2 meetings).

Regarding **claim 85**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method, wherein the scheduling request further comprises

information on buffer occupancy at the mobile terminal and on a transmission power at the mobile terminal.

Fujitsu-3GPP discloses a method, wherein the scheduling request further comprises information on buffer occupancy at the mobile terminal and on a transmission power at the mobile terminal. **(Fujitsu-3GPP shows Scheduling Information (SI) request with buffer occupancy and transmit power from the UE to Node-B as shown in Figure 1 and item 1 under Uplink Signaling on page 2)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Fujitsu-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by LFujitsu-3GPP, since Fujitsu-3GPP clearly states in Section 1 that the modification results in a flexible signaling framework.

Regarding **claim 87**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method, further comprising transmitting a scheduling assignment from the base station to at least one of the mobile terminals from which a scheduling request has been received at the base station, wherein the scheduling assignment indicates an uplink resource allocated to the mobile terminal on the dedicated uplink channel.

Fujitsu-3GPP discloses a method, further comprising transmitting a scheduling assignment **(i.e. SAs in Figure 1)** from the base station **(i.e. Node B)** to at least one of the mobile terminals **(UE of Figure 1)** from which a scheduling request has been received at the base station, wherein the scheduling assignment indicates a uplink resource allocated **(rate, power, time, bandwidth)** to the mobile terminal on the dedicated uplink channel **(See items 1 and 2 on page 3 regarding downlink Schedule Assignment)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Fujitsu-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Fujitsu-3GPP, since Fujitsu-3GPP clearly states in Section 1 that the modification results in a flexible signaling framework.

Regarding **claim 104**, it is noted that the limitations of claim 104 corresponds to that of claim 85 as discussed above, please see the Examiner's comments with respect to claim 85 as set forth in the rejection above.

Regarding **claim 105**, it is noted that the limitations of claim105 corresponds to that of claim 87 as discussed above, please see the Examiner's comments with respect to claim 87 as set forth in the rejection above.

16. **Claims 98 and 112** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry'133 in view of Jorgensen'805 and Schultz'855 as applied to claim 79 above, and further in view of Cheng et al (US Pub. No 2004/0228313 A1).

Regarding **claim 98**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method using a scheduling request. **(See Terry'133 paragraph 19)**

The combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a service type indicator indicating a transmission of data of the flow carrying a delay-critical service on the dedicated uplink channel.

Cheng'313 discloses a service type indicator indicating a transmission of data of the flow carrying a delay-critical service on the dedicated uplink channel **(Cheng''313 in paragraph 28 and Figure 2 indicates a service type indicator indicating a transmission of data of the flow carrying a delay-critical service such as video conference on the uplink)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Cheng'313, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Cheng'313, since Cheng'313 clearly

states in paragraphs 11 and 12 that the modification results in a flexible signaling framework to map data for uplink transmission.

Regarding **claim 112**, it is noted that the limitations of claim112 corresponds to that of claim 98 as discussed above, please see the Examiner's comments with respect to claim 98 as set forth in the rejection above.

17. **Claims 114-117, 119 and 126-127** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng'313 in view of Jorgensen'805.

Regarding **claim 114**, Cheng'313 discloses a method for transmitting data in a mobile communication system **(See Figs. 2 and 4)**, the method comprising:

transmitting from a mobile terminal **(i.e. UE 105)** to a base station **(i.e. Node B)** a scheduling request (**see signaling request in paragraph 49)** and (ii) requests allocation of an uplink resource to the mobile terminal (**i.e. UE 105)** for transmitting data of said plurality of flows to be multiplexed onto **(See Paragraphs 37 and 41)** the dedicated uplink channel **(See paragraph 49 where Cheng'313 discloses queue length, delay and rate allocation request from the mobile to Node B)**,

receiving at the mobile terminal from the base station a scheduling assignment **(downlink schedule notify in paragraphs 28 and 49)** that indicates the uplink resource allocated to the mobile terminal for transmission of the data of the plurality of flows to be multiplexed onto the dedicated uplink channel considering the QoS

information related to the identified flow **(see paragraphs 12, 28, 37, 41 and 49 Cheng'313 the UE receiving signal from Node B containing transmission parameter for scheduling based on QoS info on the transport channel)**,

multiplexing data of the plurality of flows to obtain multiplexed data **(See paragraphs 29, 38, and 41)**, and

transmitting multiplexed data on the allocated resource on the dedicated uplink channel **(Figure 4 – EU-DCH) (In Figure 4 the mac entity of the UE is shown performing transmitting data according to the scheduling assignment)**.

Cheng'313 fails to disclose a scheduling request wherein the scheduling request comprises an identifier identifying one flow of a plurality of flows to be multiplexed onto a single dedicated uplink channel and a scheduling assignment that considers the identifier comprised in the scheduling request identifying said one flow and its related QoS attributes.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses a scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** wherein the scheduling request comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one flow **(i.e. any IP flow shown in Fig. 12K)** of the plurality of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** to be multiplexed **(Fig. 12F)** onto a single dedicated uplink channel **(i.e. reverse link – see paragraphs 463-465)** and a scheduling assignment that considers the identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** comprised in the scheduling request**(i.e. reservation request block**

– RRBs in Fig. 12K) identifying said one flow and its related QoS attributes **(i.e. Fig. 12 F 1244a,b QoS and priority of IP flow - also see i.e. Fig. 12K – 1234c IP-flow identifier - see paragraphs 463-465)**.

In view of the above, having the method of Cheng'313 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of cheng'313 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Regarding **claim 115**, the combination of Cheng'313 and Jorgensen'805 discloses a method, further comprising receiving QoS attributes at the mobile station **(Cheng'313 UE 105**) from a network element **(i.e. Cheng'313 Node B or base station as indicated in paragraphs 27 and 28)** terminating the radio resource control signaling **(Cheng'313 RRC signaling used as indicated in paragraph 53)** of the mobile terminal **(The Node B sends schedule assignments with QoS parameters and Node B terminates the mobiles RRC signaling emanating from MAC-EU 340 of Cheng'313 Figure 3 as discussed in Cheng'313 paragraph 27, 28 and 53.)**

Regarding **claim 116**, Cheng'313 discloses a mobile terminal **(i.e. Fig. 3 UE 105)** for transmitting data in a mobile communication system **(See Figs. 2 and 4)**, the method comprising:

transmitting section operable to transmit **(i.e. UE 105 is capable of transmitting)** to a base station **(i.e. Node B)** a scheduling request (**see signaling request in paragraph 49)** and (ii) requests allocation of an uplink resource to the mobile terminal (**i.e. UE 105)** for transmitting data of said plurality of flows **(Mac flows)** to be multiplexed onto **(See Paragraphs 37 and 41)** the dedicated uplink channel **(See paragraph 49 where Cheng'313 discloses queue length, delay and rate resources allocation request from the mobile to Node B)**,

receiving section **(i.e. UE 105)** operable to receive from the base station a scheduling assignment **(downlink schedule notify in paragraphs 28 and 49)** that indicates the uplink resource allocated to the mobile terminal **(i.e. queue length, delay and rate resources)** for transmission of the data of the plurality of flows to be multiplexed onto the dedicated uplink channel **(Fig. 4 EU-DCH)** considering the QoS information related to the identified flow **(see paragraphs 12, 28, 37, 41 and 49 Cheng'313 the UE receiving signal from Node B containing transmission parameter for scheduling based on QoS info on the transport channel)**,

a multiplexer **(TCTF Mux paragraph 37 and Figure 3. element 320 – mac-d)** for multiplexing data of the plurality of flows to obtain multiplexed data **(See paragraphs 28, 29, 38, and 41)**, and

transmitting multiplexed data on the allocated resource on the dedicated uplink channel **(Figure 4 – EU-DCH) (In Figure 4 the mac entity of the UE is shown performing transmitting data according to the scheduling assignment)**.

wherein the transmitting section is further operable to transmit data on the allocated resource **(e.g.. queue length, delay, time, and rate resources)** on the dedicated uplink channel **(Figure 4 – EU-DCH) (i.e. according to schedule mode of Figure 4. In Paragraphs 39-41 Cheng'313 shows how the MAC-D multiplexed the Mac-d flows and in paragraph 29 discusses the scheduling assignment).**

Cheng'313 fails to disclose a scheduling request wherein the scheduling request (i) comprises an identifier identifying one flow of a plurality of flows to be multiplexed onto a single dedicated uplink channel and a scheduling assignment that considers the identifier comprised in the scheduling request identifying said one flow and its related QoS attributes.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses a scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** wherein the scheduling request (i) comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one flow **(i.e. any IP flow shown in Fig. 12K)** of the plurality of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** to be multiplexed **(Fig. 12F)** onto a single dedicated uplink channel **(i.e. reverse link – see paragraphs 463-465)** and a scheduling assignment that considers the identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** comprised in the scheduling request**(i.e. reservation request block – RRBs in Fig. 12K)** identifying said one flow and its related QoS attributes **(i.e. Fig. 12**

F 1244a,b QoS and priority of IP flow - also see i.e. Fig. 12K – 1234c IP-flow identifier - see paragraphs 463-465).

In view of the above, having the mobile of Cheng'313 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the mobile of Cheng as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Regarding **claim 117**, it is noted that the limitations of claim117 corresponds to that of claim 115 as discussed above, please see the Examiner's comments with respect to claim 115 as set forth in the rejection above.

Regarding **claim 119**, Cheng'313 discloses a computer readable storage medium for storing instructions that when executed by a processor cause a mobile terminal **(i.e. UE 105 of Fig. 3)** to transmit multiplexed data **(See Paragraphs 37 and 41)** in a mobile communication comprising system **(See Figs 3 and 4)**, by:

transmitting from a mobile terminal **(i.e. UE 105)** to a base station **(i.e. Node B)** a scheduling request (**see signaling request in paragraph 49)** and (ii) requests allocation of an uplink resource to the mobile terminal (**i.e. UE 105)** for transmitting data of said plurality of flows to be multiplexed onto **(See Paragraphs 37 and 41)** the

dedicated uplink channel **(See paragraph 49 where Cheng'313 discloses queue length, delay and rate allocation request from the mobile to Node B)**,

receiving at the mobile terminal from the base station a scheduling assignment **(downlink schedule notify in paragraphs 28 and 49)** that indicates the uplink resource allocated to the mobile terminal for transmission of the data of the plurality of flows to be multiplexed onto the dedicated uplink channel considering the QoS information related to the identified flow **(see paragraphs 12, 28, 37, 41 and 49 Cheng'313 the UE receiving signal from Node B containing transmission parameter for scheduling based on QoS info on the transport channel)**,

multiplexing data of the plurality of flows to obtain multiplexed data **(See paragraphs 29, 38, and 41)**, and

transmitting multiplexed data on the allocated resource on the dedicated uplink channel **(Figure 4 – EU-DCH) (In Figure 4 the mac entity of the UE is shown performing transmitting data according to the scheduling assignment)**.

Cheng'313 fails to disclose a scheduling request wherein the scheduling request comprises (i) an identifier identifying one flow of a plurality of flows to be multiplexed onto a single dedicated uplink channel and a scheduling assignment that considers the identifier comprised in the scheduling request identifying said one flow and its related QoS attributes.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses a scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** wherein the scheduling

request (i) comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one flow **(i.e. any IP flow shown in Fig. 12K)** of the plurality of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** to be multiplexed **(Fig. 12F)** onto a single dedicated uplink channel **(i.e. reverse link – see paragraphs 463-465)** and a scheduling assignment that considers the identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** comprised in the scheduling request**(i.e. reservation request block – RRBs in Fig. 12K)** identifying said one flow and its related QoS attributes **(i.e. Fig. 12 F 1244a,b QoS and priority of IP flow - also see i.e. Fig. 12K – 1234c IP-flow identifier - see paragraphs 463-465)**.

In view of the above, having the medium of Cheng'313 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the medium of cheng'313 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Regarding **claim 126**, the combination of Cheng'313 and Jorgensen'805 disclose the method according to claim 116, wherein the scheduling request requests allocation of an uplink resource to the mobile terminal for transmitting data of said plurality of flows multiplexed to a Protocol Data Unit (PDU) on the dedicated uplink channel **(See Cheng'313 paragraph 40 discussing multiplexed MAC PDU and in paragraph 57 it is identified as MAC-e PDU – see further paragraphs 35,37, and 41 to understand mac d s are muxed into a MAC-E PDU)**.

Regarding **claim 127**, the combination of Cheng'313 and Jorgensen'805 disclose the method according to claim 120, wherein the PDU is MAC-e PDU **(see Cheng'313 Paragraph 57 where it is identified as MAC-e PDU)**

18. **Claims 114-115** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng'313 in view of Cheng et al (US 7, 336, 632 B2).

Regarding **claim 114**, Cheng'313 discloses a method for transmitting data in a mobile communication system **(See Figs. 2 and 4)**, the method comprising:

transmitting from a mobile terminal **(i.e. UE 105)** to a base station **(i.e. Node B)** a scheduling request (**see signaling request in paragraph 49)** and (ii) requests allocation of an uplink resource to the mobile terminal (**i.e. UE 105)** for transmitting data of said plurality of flows to be multiplexed onto **(See Paragraphs 37 and 41)** the dedicated uplink channel **(See paragraph 49 where Cheng'313 discloses queue length, delay and rate allocation request from the mobile to Node B)**,

receiving at the mobile terminal from the base station a scheduling assignment **(downlink schedule notify in paragraphs 28 and 49)** that indicates the uplink resource allocated to the mobile terminal for transmission of the data of the plurality of flows to be multiplexed onto the dedicated uplink channel considering the QoS information related to the identified flow **(see paragraphs 12, 28, 37, 41 and 49 Cheng'313 the UE receiving signal from Node B containing transmission parameter for scheduling based on QoS info on the transport channel)**,

multiplexing data of the plurality of flows to obtain multiplexed data **(See paragraphs 29, 38, and 41)**, and

transmitting multiplexed data on the allocated resource on the dedicated uplink channel **(Figure 4 – EU-DCH) (In Figure 4 the mac entity of the UE is shown performing transmitting data according to the scheduling assignment)**.

Cheng'313 fails to disclose a scheduling request wherein the scheduling request comprises an identifier identifying one flow of a plurality of flows to be multiplexed onto a single dedicated uplink channel and a scheduling assignment that considers the identifier comprised in the scheduling request identifying said one flow and its related QoS attributes.

However, the above mentioned claimed limitations are well known in the art as evidenced by Cheng'632. In particular, Cheng'632 discloses a scheduling request **(Fig. 10 central scheduling – step 178 scheduling request includes service id)** wherein the scheduling request comprises an identifier **(Fig. 10 SR_ID)** identifying one flow of the plurality of flows **(many service instances can concurrently exist for a single mobile – Column 9, Lines 64-67)** to be multiplexed onto a single dedicated uplink channel **(i.e. reverse link)** and a scheduling assignment that considers the identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** comprised in the scheduling request**(i.e. See Fig. 10 SR_ID)** identifying said one flow and its related QoS attributes **(i.e. based on the SR_ID a new rate is assigned - see Column 9, lines 43-47 and Column 4, Lines 15-18)**.

In view of the above, having the method of Cheng'313 and then given the well established teaching of Cheng'632, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of cheng'313

as taught by Cheng'632, since Cheng'632 clearly states in Column 4, Lines15-18 using identification of the flow or service allows the base station controller to quickly identify QoS attributes associated with the flow.

Regarding **claim 115**, the combination of Cheng'313 and Cheng'632 disclose a method, further comprising receiving QoS attributes at the mobile station **(Cheng'313 UE 105**) from a network element **(i.e. Cheng'313 Node B or base station as indicated in paragraphs 27 and 28)** terminating the radio resource control signaling **(Cheng'313 RRC signaling used as indicated in paragraph 53)** of the mobile terminal **(The Node B sends schedule assignments with QoS parameters and Node B terminates the mobiles RRC signaling emanating from MAC-EU 340 of Cheng'313 Figure 3 as discussed in Cheng'313 paragraph 27, 28 and 53.)**

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HABTE MERED whose telephone number is (571)272-6046. The examiner can normally be reached on Monday to Friday 10:30AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung S. Moe can be reached on 571 272 7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Frank Duong/
Primary Examiner, Art Unit 2474

/Habte Mered/
Examiner, Art Unit 2474